

Ectopic enamel pearl

Vandana Rathva

Department of Periodontics, K.M.Shah
dental college and hospital, Piparia,
Vadodara, Gujarat, India

Abstract

Enamel pearls are one of a number of different enamel structures that can be found on the roots of deciduous and permanent teeth. They have a distinct predilection for the furcation areas of molar, particularly the maxillary third and second molars. However, they have been found less commonly on the apical portions of the root. This report describes an unusual case of enamel pearl on apical third of mandibular molar teeth. Enamel pearl was confirmed as predisposing factor for the cause of localized periodontitis; it is very important to recognize their radiographic aspect to ensure proper treatment of involved teeth.

Introduction

Enamel pearls are a developmental anomaly of teeth, also known as enamelous, enamel droplets, enamel globules, enamel nodules, enamel knots and enamel exostoses.^{1,2} They are ectopic globules of enamel on the root surface; on rare occasions, they may occur within dentin and in these cases they are referred to as intradental, interdental, or intradentinal enamel pearls.^{1,3} The mean prevalence of enamel pearls is 2.69%; when referring to only molars, it is 2.28%.^{1,4}

Enamel pearls have a predilection for molars and are rarely associated with premolars, canines or incisors.¹ In 20% of cases, multiple teeth are involved; 10.8% have two molars involved; 2.7% have five.⁴ In 8.7% of cases, it is possible to find more than one pearl per molar with as many as four pearls on the same tooth.³ Enamel pearls occur mainly in permanent teeth, but primary teeth can also be affected.³ Their cause remains obscure. A theory suggests that they develop because of residual Heartwig's epithelial root sheath.^{1,2,4}

Macroscopically, enamel pearls appear as small, well-defined globules of enamel, generally round, white, smooth and glass-like, that adhere to the tooth via a sessile base. The diameter can vary between 0.3 and 4 mm (mean 1.7 mm).^{1,2}

Histologically, enamel pearls are classified as true enamel pearls (formed entirely of

enamel), composite enamel pearls or enamel dentin pearls (formed by enamel and dentin) and enamel-dentin-pulp pearls (formed by enamel, dentin and pulpal tissue). Most enamel pearls are composite enamel pearls appear as well-derived, radiopaque round masses.² They are suggested as a cause of periodontitis because they obtrude connective tissue attachment, allowing only a hemidesmosomal junction less resistant to periodontal breakdown.

Case Report

A 30-year-old man systemically healthy presented with chief complaint of bleeding gums. Periapical radiograph revealed severe bone loss around the mandibular first molar. The presence of one enamel pearl on the first right molar on mesial root surface (Figure 1). Periodontal probing showed local bleeding on interproximal areas. A diagnosis of chronic localized severe periodontitis was established. Non-surgical periodontal therapy (scaling and root planning) was done. After one month periodontal regenerative surgical therapy with odontoplasty was planned (Figure 2). Reevaluation and follow up planned.

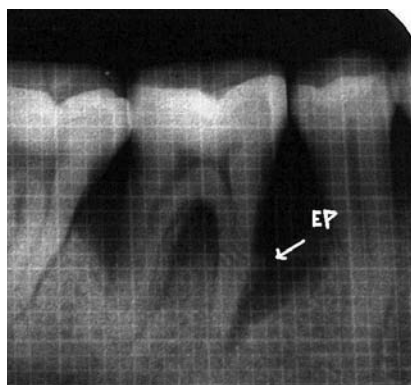


Figure 1. Radiographically, enamel pearl seen as radiopaque mass on mesial surface of root of mandibular first molar.



Figure 2. Clinically, after reflection of flap, enamel pearl seen as globule attached to root cementum.

Correspondence: Vandana Rathva, 56, Gajanan Park, Near Manjalpur Water Tank, G.I.D.C. Road, Manjalpur, Vadodara-390011, Gujarat, India. Tel: +91.9825593509 - Fax: +91.2668.245069. E-mail: drvandana07@hotmail.com

Key words: enamel pearls, localized periodontitis, root enamel.

Received for publication: 20 December 2011.

Revision received: 28 February 2012.

Accepted for publication: 1 March 2012.

Conflict of interests: the author declares no potential conflict of interests.

This work is licensed under a Creative Commons Attribution NonCommercial 3.0 License (CC BY-NC 3.0).

©Copyright V. Rathva, 2012
Licensee PAGEPress, Italy
Clinics and Practice 2012; 2:e46
doi:10.4081/cp.2012.e46

Discussion

This rare case of enamel pearl present on apical third of mandibular teeth showed that it had facilitated the progression of periodontitis. It is well established that anatomical or iatrogenic factors can predispose a particular site to periodontitis. Enamel pearls preclude connective tissue attachment.^{1,4,5} An early diagnosis of enamel pearls is important for better prognosis. Once detected should be surgically eliminated. Moreover, odontoplasty, tunneling, root separation or resection are indicated.

References

1. Moskow BS, Canut PM. Studies on root enamel (2). Enamel pearls. A review of their morphology, localization, nomenclature, occurrence, classification, histogenesis and incidence. *J Clin Periodontol* 1990; 17:275-81.
2. Kupietzky A, Rozenfarb N. Enamel pearls in the primary dentition: report of two cases. *ASDC J Dent Child* 1993;60:63-6.
3. Cavanha AO. Enamel pearls. *Oral Surg Oral Med Oral Pathol* 1965;19:373-82.
4. Darwazeh A, Hamasha AA. Radiographic evidence of enamel pearls in Jordanian dental patients. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2000;89:255-8.
5. Goldstein AR. Enamel pearl as contributing factor in periodontal breakdown. *J Am Dent Assoc* 1979;99:210-1.